

Before the  
**FEDERAL COMMUNICATIONS COMMISSION**  
Washington, D.C. 20554

RECEIVED  
MAR 15 1996  
FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY  
**ORIGINAL**

In the Matter of )

Closed Captioning and Video Description )  
of Video Programming )

MM Docket No. 95-176

To: The Commission - Mail Stop 1170

DOCKET FILE COPY ORIGINAL

**COMMENTS OF THE NATIONAL CAPTIONING INSTITUTE**

1. Introduction. The National Captioning Institute ("NCI") hereby submits these comments in response to the Commission's *Notice of Inquiry* in the above-captioned proceeding, FCC 95-484, released December 4, 1995. NCI is a non-profit corporation that has provided captioning services for video programming of all kinds since the adoption of the Commission's Rules setting aside line 21 of the NTSC vertical blanking interval for that purpose. NCI also spearheaded the legislative and administrative efforts that culminated in the adoption of the requirement that every television receiver with a 13-inch or larger screen sold in the United States have built-in capability to decode and display closed captions.<sup>1/</sup>

2. The instant proceeding is an Inquiry, designed to gather information, pursuant to Section 713(a) of the Telecommunications Act of 1996 (the "1996 Act"). These comments are filed from that point of view and will provide the Commission with information known to

---

<sup>1/</sup> See the Television Decoder Circuitry Act and Section 15.119 of the Commission's Rules, adopted in Gen. Docket No. 91-1. Prior to the adoption of this regulation, only set-top decoders were available; and NCI was the only significant manufacturer of that product. NCI vigorously pursued the development of the low-cost integrated circuit that ultimately made the cost of mandatory decoding for all receivers minimal. NCI was persistent in this effort despite the fact that the end result was the demise of a very significant part of its revenue base.

No. of Copies rec'd  
List A B C D E

09

NCI. Presumably, the Commission will progress later on to a Notice of Proposed Rule Making, to implement Sections 713(b) through (e) of the 1996 Act.<sup>2/</sup>

3. Benefits of Closed-Captioning. The extreme importance of closed captioning to the deaf and hard of hearing community are well known. Television is the most pervasive and influential mass medium in the United States today, if not the entire world. Television is inaccessible to deaf and hard of hearing persons without captioning, as very little of the meaning of programming can be understood without the sound channel.<sup>3/</sup> Further, as the Commission is already aware, captioning is used by at least as many, if not more, people who would not be classified as "deaf" or sufficiently "hard of hearing" to require the use of a hearing aid on a regular basis. Many people whose hearing capabilities are reduced with age can benefit from having captions available; captions are widely displayed in noisy, public environments where sound from a TV loudspeaker is drowned out; many people whose native language is not English are able to achieve a better understanding of the diverse American culture with captions; and captions facilitate some people's learning to read English or learning to read at all. Captioning is an important tool for basic access by large numbers of people, as well as a learning tool for millions of others.

4. The National Health Survey of 1993 from the U.S. Department of Health and Human Services ("HHS") reported that there are some 24 million people with hearing impairments in the United States and some nine million with visual impairments. A report

---

<sup>2/</sup> The 1996 Act and the instant Inquiry also deal with aural descriptions of video programming for persons unable to see a television screen. NCI is not currently involved in aural description activities and will not comment on that aspect of this proceeding.

<sup>3/</sup> The requirement to display emergency messages visually is helpful, of course, but it does nothing to make basic programming accessible.

entitled "A Profile for Older Americans: 1995" by the American Association of Retired Persons and the Administration on Aging of HHS indicates that one of the most frequently recurring conditions with age is hearing impairment, affecting 31 out of 100 elderly persons. As the "Baby Boom" generation ages, the number of elderly persons in the population will increase -- will double between 1990 and 2030 by one estimate -- with a proportionate increase in persons with hearing impairments. Appendix A hereto is an informative information sheet published by NCI, indicating the components of a potential audience of up to 100 million persons for captioned television programs.

5. The hope of a greater voluntary commitment by video service providers after passage of the Television Decoder Circuitry Act has not been fully realized. NCI believes that everyone seeking to be entertained and/or educated by television -- America's most pervasive medium -- should have access to that medium.

6. Sources of Captioning. Captioning for filmed or taped programming is normally added to a program at the end of the production process, just prior to distribution to television stations and other mass media outlets.<sup>4/</sup> Methods are also available for real-time captioning at the time of broadcast.<sup>5/</sup> There are dozens of companies that offer captioning services, including NCI. Although captioning services are purchased by over-the-air television broadcast organizations, cable companies, and other mass media

---

<sup>4/</sup> Captioning of live programming is a developing art and is not as free from errors as captioning of pre-recorded programming, where there is an opportunity for editing. In certain situations, particularly where only a short turn-around time is available for inserting captions, a form of live captioning known as "automatic live encoding" may be used for pre-recorded programs. As discussed further below, there are currently no quality standards for captioning using any method.

<sup>5/</sup> See paragraph 10 and footnotes 8 and 9, *infra*.

organizations, broadcasters caption a much larger proportion of their programs than other media.

7. Previously Published Programming. Broadcast organizations and program producers seldom order captioning services for a program that was previously exhibited without captions. For programming produced prior to the early 1980's, very little captioning is being done; and that which is being done is focused primarily on home videos and off-network programming. To the extent that older programming is in the public domain and is no longer owned by any copyright holder, there is usually no one with a sufficient economic interest in the program to fund captioning.

8. There is also a need for new captioning services for previously-exhibited programs that were initially captioned, when the programs are edited to adjust program length or content is changed for subsequent showings. When such editing of programs is undertaken, the captions must be edited as well. This process is called "reformatting" in the captioning industry. NCI has found that the cost of reformatting is typically one-third to one-half the cost of the initial captioning effort.

9. Digital Technologies. NCI chairs the Working Group for Advanced Television Closed Captioning that is part of the Television Data Systems Subcommittee of the Electronic Industries Association ("EIA"). This working group has already developed recommended practices that have assured that closed captioning will be part of the Advanced Television System ("ATV") platform.<sup>6/</sup> It has recently become apparent, however, that broadcasters are interested in digital multi-channel Standard Definition Television ("SDTV") as well as

---

<sup>6/</sup> Specific testing with respect to data latency, best location for the transmission of captioning data (whether or not to establish a separate packeted data stream apart from the main video stream), and other technical concerns remain to be completed.

High Definition Television ("HDTV"). The Commission has already stated in MM Docket No. 87-268 that once an ATV standard is selected, a proceeding will be initiated looking toward appropriate changes in its captioning rules.<sup>7/</sup> To fulfill that commitment, NCI urges the Commission to support the outcome of the efforts of the EIA Subcommittee to set standards for SDTV as well as HDTV, thus providing a foundation for full implementation of closed captioning regardless of how the marketplace directs the speed and direction of the development of digital TV services.

10. Cost. The cost of captioning a program depends on a number of factors, some of which are program type, program length, and whether captions are inserted live at the time of broadcast or pre-recorded. Typical prices are as follows:

- a. On-line captioning<sup>8/</sup> of national programs: \$300-750 per program hour.
- b. On-line captioning of local news programs: \$125-300 per program hour.
- c. Off-line captioning: \$800-1,200 per program hour.<sup>9/</sup>

11. Supply of Captioning Services. There is an adequate number of firms providing closed-captioning services to meet current demand at reasonable prices. Further, there appears to be an adequate supply of qualified personnel to perform off-line captioning services. On-line captioning requires a different kind of training, which generally follows training as a court reporter. The supply of personnel with that kind of training is limited,

---

<sup>7/</sup> *Advanced Television Systems*, 7 FCC Rcd 3340, 70 RR 2d 1102 (1992), at par. 77.

<sup>8/</sup> "On-line" captioning means the insertion of captions at the time of broadcast of a live program.

<sup>9/</sup> "Off-line" captioning involves the addition of captioning to a filmed or taped program. It is more expensive than on-line captioning because it involves study of the script, preparation of accurate captions, placement of each caption at the best location on the screen, and review and editing. The results are much higher quality than for on-line captioning, where there is no opportunity to make any reflective judgments or to correct any errors.

and significant amounts of on-line captioning services cannot normally be supplied on short notice.<sup>10/</sup>

12. Funding Sources. There are several sources of funding for captioning services, including:

- The U.S. Department of Education ("ED")<sup>11/</sup>
- National television broadcast networks
- Local television stations
- National and regional cable television networks
- Program producers
- Corporate funders
- Private foundations
- Individuals

The ED currently funds captioning under cooperative arrangements with NCI and other captioning service providers for the following nationally-distributed programs:

- News
- Sports
- Syndicated programming
- Movies, mini-series, and special programs
- Daytime programs
- Children's programs

---

<sup>10/</sup> It takes approximately six months to train a person who is already expert in court reporting to be able to perform on-line captioning services.

<sup>11/</sup> The ED is by far the largest funding source, with an annual investment in captioning of roughly \$7.9 million.

The ED's share of funding varies by criteria established for each grant and by program within each cooperative agreement. Overall, the ED funds approximately 25% of the hours captioned by NCI. In NCI's view, while there is substantial funding available for captioning, there is not enough funding available to caption as many programs as should be captioned.

13. Technical and Quality Standards. While basic technical compatibility among captioning services is assured by virtue of Section 15.119 of the Commission's Rules, there are currently no standards for the quality of captioning services in terms of the accuracy of depiction of the dialog, appropriateness of display speed in terms of the audience's reading capability, spelling and grammatical accuracy, and overall completeness of the captioning service in terms of not omitting critical portions of the dialog. NCI has always been committed to providing the highest quality captioning services. It strives for verbatim, error-free captions as its standard quality service; and its registered trademark is a symbol of quality captioning services. NCI makes extensive use of process and product monitoring, as well as immediate feedback for all programming.<sup>12/</sup> NCI has also developed training aids to improve the quality of captions for the particularly demanding aspects of real-time (on-line) captioning. NCI urges the Commission to consider minimum quality standards, sufficient to assure consistent, adequate service to the public but without impairing

---

<sup>12/</sup> NCI has a Consumer Advisory Board of deaf and hard of hearing users of captioning, which provides NCI with feedback on various aspects of captioned programming, such as preferred programs, captioning styles, and suggestions for improving quality. NCI also has a Sports Advisory Group which provides feedback on sports programming. Periodic surveys of consumers and other research projects are used to for guidance in selecting programming and fine-tuning the captioning process. There is no centralized means of synthesizing feedback to various captioning agencies. The Commission may want to consider a mechanism to help ensure that consumers get the best quality product in captioning.

competition among captioning service providers. NCI's Real-Time and Pre-Recorded Quality Control Procedures, attached hereto as Appendices B and C, include several examples of quality standards.

14. NCI hopes that the foregoing comments are helpful. It looks forward to participating in future phases of this proceeding.

National Captioning  
Institute, Inc.  
1900 Gallows Rd., Suite 3000  
Vienna, VA 22182  
Tel. 703-917-7600

Respectfully submitted,



Peter Tannenwald

Irwin Campbell &  
Tannenwald, P.C.  
1730 Rhode Island Ave., N.W.  
Suite 200  
Washington, DC 20036-3101  
Tel. 202-728-0400  
Fax 202-728-0354

March 15, 1996

Counsel for the National  
Captioning Institute



## Nearly 100 Million Americans Can Benefit from Watching Captioned TV

Over the years, NCI research has shown that many people can benefit from watching captioned TV. These audiences include: people who are deaf or hard of hearing; those learning English as a second language;

young children learning to read; remedial readers; and illiterate adults. Today, the potential U.S. audience for captioned television is estimated at nearly 100,000,000.

### Audiences that can benefit from captioned TV:

#### 24 Million Deaf & Hard-of-Hearing People

Source: Gallaudet University

- of this group, 14 million people have a loss that affects their ability to enjoy television

Source: NCI Market Facts Study

#### 12 Million Young Children Learning to Read

Source: U.S. Department of Education

- .6 million children in Head Start
- 3.7 million kindergartners
- 3.9 million 1st graders
- 3.8 million 2nd graders

#### 3.7 Million Remedial Readers

Source: U.S. Department of Education

- figure based on Compensatory Education Program targeted at students (K-12) who received scores below 50% on standardized tests

#### 30 Million for Whom English is a Second Language

Source: National Captioning Institute  
Data from U.S. Census Bureau Data

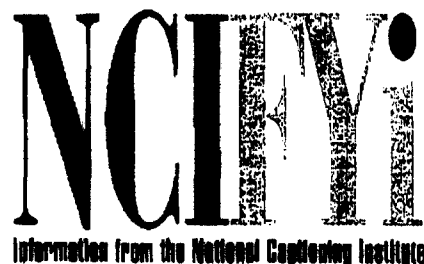
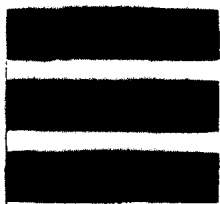
- of the above, 7.7 million Hispanics who speak only Spanish
- of the above, 3 million Asians who speak only their native language
- 1.6 million Hispanics and Asians in adult education

Source: U.S. Department of Education

#### 27 Million Illiterate Adults

Source: U.S. Department of Education

- 56% are under the age of 50
- 41% live in metropolitan areas, 8% in rural areas



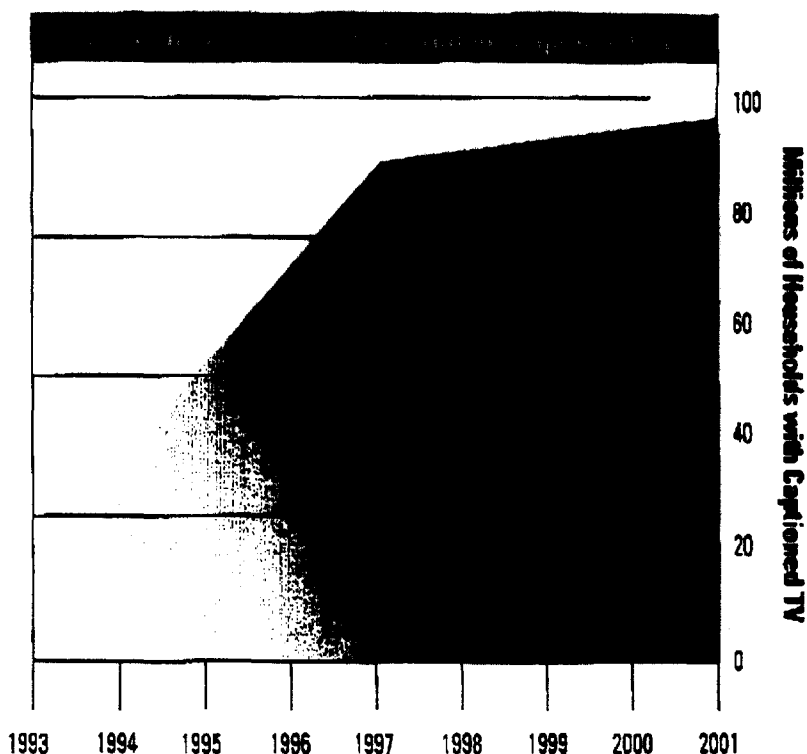
## A New Era in Captioned TV

Millions of people now have access to the educational and entertainment benefits of captioning at the touch of a button.

The Television Decoder Circuitry Act mandates that all television sets with screens 13 inches or larger, that are manufactured for sale in the United States after July 1, 1993, must contain built-in caption-decoding capability.

As the nonprofit corporation that launched the captioned television service in 1980, the National Captioning Institute applauds this milestone in television history. Since the inception of the service, NCI has led the way in increasing the availability of captioned programming; been the sole manufacturer and distributor of the set-top TeleCaption™ decoders in the U.S.; researched the educational benefits of captioning; and has begun expanding the captioned television service internationally.

NCI estimates that 20 million new households a year are able to share in the educational benefits of captioned TV.



Source: National Captioning Institute, Inc. ©1993



Internet: [mail@ncicap.org](mailto:mail@ncicap.org)

1900 Gallows Road, Suite 3000 • Vienna, VA 22182 • 703-917-7600 V/TTY • 703-917-9853 FAX

545 Fifth Avenue, Suite 1101 • New York, NY 10017 • 212-557-7011 V/TTY • 212-557-6875 FAX

303 North Glenoaks Boulevard, Suite 200 • Burbank, CA 91502 • 818-238-0068 V/TTY • 818-238-4266 FAX

## **Appendix B**

### **Real-Time Quality Control Procedure**

On a monthly basis, Company will provide NCI quality reviews, as shown in Exhibit 1 for a minimum of 25% of all programs Company captioned during that month bearing the NCI logo. The review, accompanying steno notes, and a VHS tape of said programs will be due the fifteenth day of each month. Additionally, NCI reserves the right to request review of any other programs captioned by Company, and bearing the NCI logo.

Company guarantees the following items for every program it captions bearing the NCI logo.

- \* Captions will be near or pure verbatim,
- \* Captions will be at 98.5% or higher accuracy at 225 words per minute, when calculated using Exhibit 1,
- \* Company will provide and maintain backup power and captioning systems to ensure successful delivery of captions,
- \* Company will provide and maintain primary and backup audio and video,
- \* Company will monitor the nationally-distributed satellite feed and the local cable affiliate to assure high quality reception.

Completed reviews, steno notes, and the VHS tape will be sent to the attention of Tammie Shedd at NCI.

Questions regarding the quality assurance should be directed to:

#### **NATIONAL CAPTIONING INSTITUTE**

Name: Tammie Shedd  
Address: 1900 Gallows Road, Suite 3000  
Vienna, Virginia 22182  
Phone: (703) 917-7614  
Fax: (703) 917-9878

REVIEW FOR REAL-TIME CAPTIONER

REVIEWEE:

REVIEWER:

BROADCAST & BROADCAST DATE:

DATE OF REVIEW:

TOTAL ERRORS:

\_\_\_\_\_

TOTAL WORDS SPOKEN:

\_\_\_\_\_

TOTAL WORDS DELETED DUE TO DELAY:

\_\_\_\_\_

TOTAL WORDS POSSIBLY WRITTEN:

\_\_\_\_\_

TOTAL WORDS WRITTEN:

\_\_\_\_\_

PERCENT WRITTEN:

(Total words written x 100, divided by total words possibly written)

\_\_\_\_\_

PERCENT OF ACCURACY:

(Total errors x 100, divided by words written)

\_\_\_\_\_

**REVIEW FOR REAL-TIME CAPTIONER  
ERROR CLASSIFICATIONS**

MISSTROKE	HOMOPHONE CONFLICTS (LIST EXAMPLES ON COMMENTS PAGE)	OCCURRENCES OF WORDS DELETED (MEANING CHANGED/ OMISSION OF INFO)	TOTAL WORDS DELETED	POOR ENTRIES (MISSPELLING)	SINGULAR FOR PLURAL	PLURAL FOR SINGULAR	STYLISTIC & PUNCTUATION ERRORS	ARROWS (MISSTROKES ONLY)	KEY PROBLEMS	STACKING PROBLEMS
				UNTRANS (NONENTRIES)	INCORRECT PARTICIPLES	INCORRECT WORD WRITTEN	COMMAS OMITTED BETWEEN CITIES & STATES	INCORRECT USAGE OF ARROWS OR SPEAKER I.D.	NUMERICAL	
										ONE WORD vs. TWO WORDS (ONLY NOTED)
							COMMAS OMITTED IN A SERIES	CONTRACTIONS WRITTEN OUT	PROPER ACRONYM STYLE	
							POSSESSIVES			
								HYPHENS (ONLY NOTED)		
							\$, %, MUSICAL NOTES & QUOTES			
										MISTRANS CAUSED BY THE NUMBER BAR

## **Appendix C**

### **Pre-Recorded Quality Control Procedure**

On a monthly basis, Company will provide NCI quality reviews, as shown in Exhibit 1 for a minimum of 25% of all programs Company captioned during that month bearing the NCI logo. The review, accompanying data file, and a VHS tape of said programs will be due the fifteenth day of each month. Additionally, NCI reserves the right to request review of any other programs captioned by Company, and bearing the NCI logo.

Company guarantees the following items for every program it captions bearing the NCI logo.

- \* Captions must accurately represent the audio portion of the program. All spoken dialogue, narration, song lyrics, and relevant sound effects must be captioned.
- \* All words, including proper nouns and scientific terms, are to be spelled correctly according to reliable published dictionaries, encyclopedia, almanacs, and other resources. Acceptable standards of punctuation must be followed.
- \* Dialogue, narration, and lyrics are to be captioned verbatim, except where the display period of a caption is so brief or its text so extensive as to prevent it being read by the average viewer. In such cases, text may be edited in a way that does not significantly alter the meaning, intent, or mood of the program.
- \* Whenever possible, captions must be timed, with frame accuracy, to appear and/or disappear at a shot change.
- \* Speakers must be identified, either by overt labeling of the caption or through use of logical caption placement strategies.
- \* Captions must be displayed at least as long a period of time as the audio portion being captioned.
- \* Whenever possible, captions must not cover on-screen graphics and other important visual information.
- \* For the sake of captioning consistency within a program, captions must be in accordance with a uniform set of style standards and guidelines, either developed by the captioning agency or acquired from outside sources.
- \* If the captioning agency has not, it must adopt quality control procedures to ensure that captions meet the above standards.

Completed reviews, caption data file, and the VHS tape will be sent to the attention of Jeff Helminiak at NCI.

Questions regarding the quality assurance should be directed to:

NATIONAL CAPTIONING INSTITUTE

Name: Jeff Helminiak

Address: 1900 Gallows Road, Suite 3000  
Vienna, Virginia 22182

Phone: (703) 917-7778

Fax: (703) 917-9878

REVIEW OF PRE-RECORDED PROGRAM

TOTAL ERRORS:

\_\_\_\_\_

REPRESENTATION ERRORS:

\_\_\_\_\_

PUNCTUATION/GRAMMATICAL ERRORS:

\_\_\_\_\_

TIMING ERRORS:

\_\_\_\_\_

TOTAL WORDS CAPTIONED:

\_\_\_\_\_

PERCENT OF ACCURACY:

(Total errors x 100, divided by words written)

\_\_\_\_\_